Comparisons of Job Characteristics

Focus Occupation: Computer Software Engineers, Applications (15-1031)
Associated Occupation: Computer Systems Analysts (15-1051)

Compare Knowledge
Compare Skills
Compare Abilities
Compare Detailed Work Activities
Compare Tools and Technologies

<<	Focus occupation element is much lower
<	Focus occupation element is lower
0	Focus occupation element is at a similar level
>	Focus occupation element is at a higher level
>>	Focus occupation element is at a much higher level

Knowledge — Similarity of Focus Occupation to Associated Occupation: 82

Focus Occupation: Computer Software Engineers, Applications (15-1031)
Associated Occupation: Computer Systems Analysts (15-1051)

Associated Occupation's Key Knowledge Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating		Evaluation of Focus Occupation
Computers and Electronics	8.4	19.3	23.8	>>	Current knowledge level is likely more than sufficient
Customer and Personal Service	11.3	15.4	6.6	<<	Extensive education and/or training may be required
Education and Training	9.2	13.2	7.1	<<	Extensive education and/or training may be required
Administration and Management	8.4	11.3	6.0	<<	Extensive education and/or training may be required
Engineering and Technology	5.7	11.0	10.1	0	Current knowledge level may be sufficient
Telecommunications	3.9	6.8	4.2	<<	Extensive education and/or training may be required

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Skills — Similarity of Focus Occupation to Associated Occupation: 76

Focus Occupation: Computer Software Engineers, Applications (15-1031)
Associated Occupation: Computer Systems Analysts (15-1051)

Associated Occupation's Key Skills Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating		Evaluation of Focus Occupation
Systems Evaluation	6.4	12.7	13.4	0	Current skill level may be sufficient
Active Learning	8.7	12.6	9.6	<<	Extensive development of skills in this area may be required
Systems Analysis	6.5	12.6	13.3	0	Current skill level may be sufficient
Operations Analysis	5.0	10.6	11.4	0	Current skill level may be sufficient
Quality Control Analysis	5.9	10.3	9.6	0	Current skill level may be sufficient
Programming	2.2	10.2	14.6	>>	Skill level is likely more than sufficient

Technology Design	2.6	9.7	10.3	0	Current skill level may be sufficient
Troubleshooting	4.5	8.9	13.5	>>	Skill level is likely more than sufficient

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Abilities — Similarity of Focus Occupation to Associated Occupation: 98

Focus Occupation: Computer Software Engineers, Applications (15-1031)
Associated Occupation: Computer Systems Analysts (15-1051)

Associated Occupation's Key Abilities Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating		Evaluation of Focus Occupation
Deductive Reasoning	10.6	13.9	13.6	0	Current ability level may be sufficient
Information Ordering	9.9	12.9	11.6	<	Some improvement in abilities may be required
Fluency of Ideas	7.6	12.7	11.9	0	Current ability level may be sufficient
Category Flexibility	9.0	11.8	11.1	0	Current ability level may be sufficient
Originality	7.6	11.6	10.8	0	Current ability level may be sufficient
Flexibility of Closure	7.8	10.4	9.1	<	Some improvement in abilities may be required
Mathematical Reasoning	6.3	10.3	12.4	>	Current ability level is likely sufficient
Speed of Closure	5.9	8.8	8.1	0	Current ability level may be sufficient

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Activities that Both Occupations Have in Common — Similarity of Focus Occupation to Associated Occupation: 95

Focus Occupation: Computer Software Engineers, Applications (15-1031)
Associated Occupation: Computer Systems Analysts (15-1051)

Work Activities	Exclusivity of Activity
Adjust computer operation system	84
Communicate technical information	4
Conduct training for personnel	30
Consult with customers concerning needs	69
Design computer hardware or software interface	87
Design data processing systems	92
Design data security systems	89
Design systems in cooperation with colleagues	84
Develop mathematical simulation models	70
Develop or maintain databases	30
Develop tables depicting data	33
Evaluate computer system user requests or requirements	81
Evaluate prototype computer software systems	89

Follow data security procedures	77
Follow data storage procedures	75
Make presentations	13
Monitor computer operation	85
Prepare technical reports or related documentation	22
Program computers for electronic engineering applications	87
Program computers using existing software	85
Program mainframe computer	84
Provide technical computer training	82
Recommend software or hardware purchases	85
Revise or correct errors in computer programs, software, or systems	85
Supervise programming personnel	95
Test computer programs or systems	78
Train workers in use of equipment	87
Use computer networking technology	81
Use computer programming language	82
Use computers to enter, access or retrieve data	3
Use knowledge of mainframe computers	78
Use project management techniques	47
Use spreadsheet software	18
Write computer software, programs, or code	84
Write documentation for computer programming	87
Write technical specifications for computer systems, software or applications	92

Not all positions in these occupations will necessarily perform all of the listed activities. The exclusivity rating is an indication of how unique the activity is amongst all occupations. The maximum rating is 100. High scores indicate that only a small number of occupations engage in that activity.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Tools and Technologies that Both Occupations Have in Common

Similarity of Focus Occupation to Associated Occupation: 93

Focus Occupation: Computer Software Engineers, Applications (15-1031)
Associated Occupation: Computer Systems Analysts (15-1051)

Tools and Technologies	Exclusivity
Business function specific software	1
Computers	1
Content authoring and editing software	1
Content management software	6
Data management and query software	1
Development software	4
Industry specific software	1
Network applications software	1
Networking software	21
Operating environment software	12
Security and protection software	30
Utility and device driver software	17

Not all positions in these occupations will necessarily use all of the listed tools and technologies. The exclusivity rating is an indication of how unique the tool or technology is amongst all occupations. The maximum rating is 100. High scores indicate that only a small number of occupations use that tool or technology.